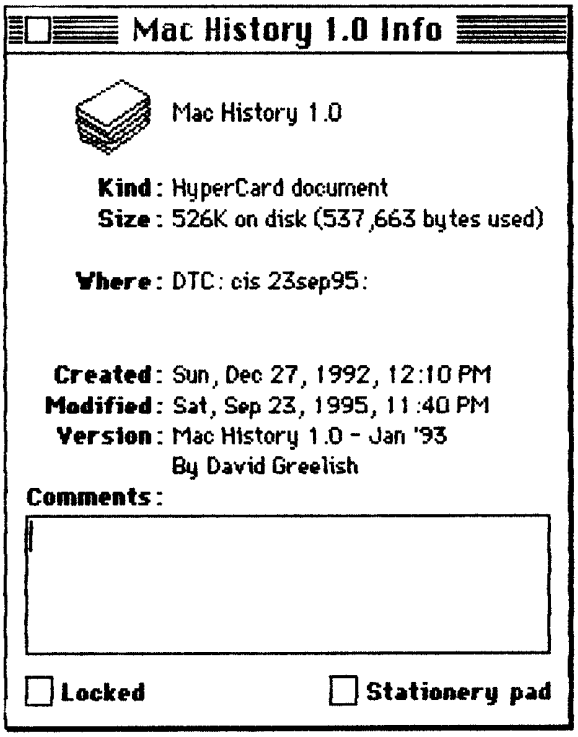
Mac History 1.0

David Greelish • 1993



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Introduction

Though the history of the personal computer is extremely brief in contrast to history in general; the personal computer has evolved faster than most any other form of modern technology. That point is debatable, but either way the Macintosh has played a key role in this history.

This stack in no way pretends to cover all the story about the other computers leading up to, or the creation of the Macintosh itself. It is really just a survey of past Macs that I have done out of interest and fun.

If you have any interest in history, then I hope you will enjoy it. Write me with any corrections or additions.

Thanks,

D. Greelish

The Xerox Alto

Well . . this is the computer that pioneered that "user-friendly" interface that you know and love today.

Developed at PARC (the Palo Alto Research Center), the Xerox Corporation's Alto personal computer was the first computer to utilize the mouse/icon environment. Designed in 1973, it had 128K of RAM! (As much or more than most mini-computers had at the time.) It also used a bit-mapped 608 x 808 pixel, 8 1/2" by 11" black on white display screen, a 2.5 MB removable cartridge disk, could be used with a laser printer; plus, it connected directly to an Ethernet network. (Where can you get one of these 20 year old computers for your network you say!)

The Alto used an operating system and language called "Smalltalk" and a word processor named "Bravo."

The Alto is arguably the first personal computer. (Though most computer historians consider the Altair 8800 introduced in late '74 as the first true personal computer kit.) Nearly 1000 Altos were in use by 1979.

The Alto was a giant step ahead in personal computing in the 1970's. It might have succeeded, but it suffered from a very expensive price tag ($15,000 just to produce it) and a lack of software. Its revolutionary qualities were used to develop other Xerox systems as well as the Xerox Star workstation.

The Xerox Star

The Xerox Corporation formally introduced the "desktop" user interface with the Star Workstation in 1981. This computer also incorporated the WYSIWYG (What You See Is What You Get) display

and printing technology. Basically, the Star was a bigger and better version of the Alto. It had more memory than the Alto with 192K of RAM, a clearer display with a higher resolution, a 10 MB hard drive and used 8" floppy disks. It was the first fully integrated graphics based system.

It was the Xerox Alto and Star prototype that inspired Steve Jobs to start the "Lisa" project at Apple and caused Bill Gates to consider "Windows" in the early 1980's. Steve Jobs had seen the Star demonstrated while visiting PARC. Much later, after the success of the Macintosh, Xerox sued Apple for stealing their ideas about graphical interfaces. It was decided that an idea or concept could not be copyrighted. Pretty good for Apple huh?! Yet they went on to sue Microsoft for doing exactly the same thing!

Xerox did of course think up all of the ideas and test them, but Apple made these ideas operate much more efficiently. Do you believe Apple was guilty?

The Apple Lisa

Introduced in February 1983, the Lisa computer received quite a fan-fare from electronic and computer magazines. It was hailed as the next generation in ease of use. Though most of its interface was "borrowed" from Xerox; the Lisa did a lot to improve on the basic concepts as well as introducing the one button mouse and the first integrated software.

The original Lisa computer had a full "meg" of RAM, 16K of ROM and two 5.25" "twiggy" drives. It used a 5 MB external hard drive called the "Profile" which sat up on top of its case. The screen was 12" diagonally with 364 lines by 720 dots per line resolution. It is interesting to mention that the Lisa had rectangular pixels instead of square ones. Its operating system was not quite as refined as the Macintosh, but the Lisa's ROMs did contain a lot of the code that was later to be used on the Mac. Like the Mac, Lisa also used a Motorola MC68000 microprocessor running at aprox. 8 MHz. The second generation of Lisas which were released shortly before the release of the Mac were known as Lisa2s. They had a 400K single sided 3.5" disk drive and an internal 10 MB hard drive.

The Lisa did have a small excited following for a short time, but it was apparent that its $10,000 price tag made it too impractical for even serious corporate buyers. These events occurred almost two years after the introduction of the IBM PC which cost about three times less.

Almost immediately after its introduction, Apple kicked the Lisa to the sidelines to work on its next project - A computer for the rest of us with all the features of the Lisa for around $1000. (It didn't happen!)

Around early 1985, Apple renamed the Lisa - the Macintosh XL. It was sold with a program called "MacWorks" which allowed it to emulate a Macintosh. Sales were fair.

The Macintosh 128 & 512 & 512Ke

Formally introduced in January 1984, the Mac received a huge response from its Superbowl half-time television ad. "Big Blue" (IBM) was made out to be like Big Brother from Orwell's novel 1984 in the ad. The "computer for the rest of us" had arrived to set us free.

The Mac 128 was of course known simply as the Macintosh at the time. It was later labeled with the "128" because it had 128K of RAM. It used the Motorola MC68000 chip running at aprox. 8 MHz. It had 32-bit internal registers and a 24-bit address bus. It had 64K of ROM, couldn't use a coprocessor and the memory was not upgradable because it was soldered directly to the motherboard.

It had a unique cabinet design; a semi-portable, boxlike, self-contained unit with a built in 9" black on white 512 by 342 pixel display. One 3.5" 400KB disk drive, two serial ports and a four-voice sound generator. A one button mouse and a 94 key keyboard.

Apple had hoped to sell 50,000 machines within the first 100 days, but dealers moved more than 75,000 Macs during this time. (Most at the full $2,495. list price.)

Introduced in 1985, the Mac 512 or "Fat Mac" was exactly like the original except that it had 512K of RAM and could support a serial hard drive.

Both Macs were packaged with MacWrite and MacPaint.

By the Mac's first birthday in January 1985, roughly 70% of Apple's revenue was still coming in from the Apple II line. Mac sales had slumped, but just in time, Apple introduced the LaserWriter. "Desktop Publishing" was born and the Mac was saved.

The Mac 512Ke was brought out shortly before the release of the Mac Plus in 1986. It was the same as the regular 512, except that it had 128K ROMs and could support double sided disks.

The Mac Plus

In 1986, Apple saw the need for a better Macintosh to support the huge growth of software both in number and in size. It answered with the Mac Plus. The Plus was identical in shape and size to its elders, but it had some important internal differences. It had the same processor and bus, but it was configured a little more efficiently. The most important difference was that it had a full megabyte of RAM; upgradable to 4MB with SIMMs. (Single Inline Memory Modules.) It also had 128K ROMs instead of 64K. Among other things, this allowed the Plus to read and write to 800K double sided disks. Also new with the Plus was a SCSI (Small Computer System Interface) port which allowed other peripherals to be connected like scanners, printers, hard drives, etc.; all with much faster access.

Apple had to re-think the Macintosh's MFS (Macintosh File System) as the Mac became more complex and it created the HFS

(Hierarchical File System) which we use today. The Macintosh Plus was one of the most popular Macs ever produced. It is the true "classic" Mac.

The Macintosh SE

Introduced in early 1987, the SE still looked basically like any other Mac except for horizontal lines along the front cabinet. With the SE came the option for two internal disk drives or an internal hard drive. (Installed by Apple.) An added internal fan and a totally revamped motherboard added about a 25% performance improvement over the Plus. The system had 256K ROMs and an ATB (Apple Desktop Bus) keyboard & mouse. The SE was the first Mac with an expansion slot. It also had two choices of keyboards. Later models of the SE were given the modern 1.44MB Superdrives.

1987 also saw the introduction of HyperCard! Ye Hah!

The Mac II

By mid 1987 Apple released the first color Macintosh. It used a Motorola MC68020 chip running at aprox. 16 MHz. It supported 32-bit internal registers and a 32-bit address bus. It was the first machine to support an floating point unit (FPU) coprocessor. An optional Motorola MC68851 paged memory management unit (PMMU) was installable to assist in efficient memory management. There were two Apple monitors available for it: the Apple 13" RGB and the 12" monochrome. At the time, 1-bit, 4-bit and 8-bit color cards were available. The Mac II was also able to accommodate stereo sound output. It had six NuBus slots available for expansion.

The Mac II made corporate America start taking the Macintosh more seriously. Also, because of its open architecture, third-party development of add-on cards took off. The Mac market exploded with both hardware and software.

Summary

In a nutshell, the Macintosh is a success today because of three consecutive successful products: The LaserWriter - Mac Plus - Mac II. Now almost six years of Macintosh computing later, Apple has generated a huge assortment of Macintosh computers. Though technologically exciting, it is also somewhat sad that the once uncomplex Mac days are well behind us. Here is a list of Macintoshes since the Mac II:

Macintosh IIx	Quadra 700
Macintosh IIcx	Quadra 900
Mac SE/30	PowerBook 100
Mac IIci	PowerBook 140
Mac Portable	PowerBook 170

Mac IIFX
Mac Classic
Mac LC
Mac SI
Mac LCII
Mac Classic II
Quadra 950

. . and now we have even more new Macs, both PowerBooks and modular. Unless you're really interested in buying one of the new ones, it's getting to be pretty boring stuff. Anyway, I hope you enjoyed reading this "somewhat of a history" of earlier Macs.

Commentary & Corrections – David T Craig 13 July 2003

p2 Xerox Alto:
- Alto supported many different operating systems besides Smalltalk, e.g. Pilot and Alto Executive.
- Alto would never have become a "personal computer" as most people understand this term.

p3 Xerox Star:
- Not sure if Apple saw the Star, suspect it was an Alto running Smalltalk.

p3 Apple Lisa:
- Introduced January 1983, not February.
- User interface based a bit on Xerox work, but greatly simplified by Apple, not "borrowed".
- Lisa ROMs not used for Macintosh, Greelish thinking of Lisa Desktop Libraries.
- Lisa 68000 CPU ran at 5 MHz, not 8 MHz.

About the author

Born and raised in Jacksonville, Florida; I first laid fingers on a Mac back in January of 1986 when I was working at a computer store while living in Frederick, Maryland. The Macintosh line contained all of two models - the Macintosh 512Ke and the Macintosh Plus (kinda of scary to think of the Mac Plus as the top of the line!) We also sold IBM, Compaq, HP and Epson (all messy DOS!) I was very new to computers and the Mac attracted me right away. There was something comforting about this cute little computer that was so easy to use. A funny thing about the store I worked in - all of us salespeople mostly sold DOS computers, but we did all of our work on the trusty Macs. I wanted a Mac 512Ke really bad, but I couldn't afford one . . . even with my employee discount (it was around $1400. without any extra drives, Yipe!) I only worked at the store for a few months because I decided to move back to Jacksonville, but my passion for the Macintosh had been seeded.

In Jacksonville, I got a job at an Apple dealer working part-time. I was at work one day when an Apple rep brought by one of the original Mac II prototypes to demo. It seemed incredibly fast and I was very impressed. Now color was available on the Mac and I didn't even own a regular one yet. Two years later, I again sold Macs but for a dealer in Gainesville, Florida during 1989 and 1990 while I went to college. It was during this time that I finally bought my first Mac!

Again, even with an employee discount, I couldn't afford a basic Macintosh - the Macintosh Plus with a 20 MB external HD: $1600! One day a guy brought in his Mac XL (just like an Apple Lisa computer) for service and I was fascinated by it. I had seen ads by a company called Sun Remarketing in Utah, who were selling original Lisa computers (the prototype for the Macintosh which Apple sold in 1983 for around $10,000!) I bought one from them for $1095. For all practical purposes it was just like a Mac Plus, except that it had a 12" diagonal screen that I liked better. When it "booted-up," it loaded a program called "MacWorks Plus" that allowed it to emulate a Mac running System 6.0.2. I had no problems using Microsoft Works or QuarkXpress on Lisa. Many games wouldn't work on her though because she didn't have a sound chip. If you tried to play a game that directly addressed the sound chip, the system would crash. That wasn't a big problem because I mostly used the Lisa for desktop publishing. (The Lisa's emulation of a Mac also didn't support HyperCard. That's why only now have I thought to fool around with stack making.)

During the Summer of 1990 I worked for a company back in Jacksonville that was developing a new integrated program for the Mac. I was a beta tester for them and I got the chance to see some impressive Pascal programing done and an FX in use. (Hey, I thought it was a pretty big deal at the time!) The software I worked

on became what is now known as Symantec's GreatWorks. I also did some beta testing on a prototype Classic and LC.

In March of 1991, I bought a Classic and an HP DeskWriter. I had intended to use the DeskWriter with Lisa, but it wouldn't work, so I have had to retired her. I still kept Lisa as a collector's item though. (Because I love her . . sniffle) My Classic also served me well, but I had wanted a color Mac for quite a while, as well as a little more speed. So . . . I am now the proud owner of a Macintosh Performa 400 (Mac LCII) that I bought at Sears (believe it or not) in October of 1992. My Mother-in-Law is now the proud owner of the Classic!

I still enjoy desktop publishing the most. I even use my computer to earn extra money by creating resumes, newsletters, flyers, business cards, brochures, church programs, etc. I use QuarkXpress 2.12 (an older version) and ClarisWorks for most of my projects. Now that I have created this stack, I'm an even bigger fan of HyperCard.

I enjoy reading MacUser each month and I'm still trying to get a subscription to MacWeek started. After having sold computers for a while, I realized that the part I liked best about it all was using my Mac and talking to, teaching or helping others with theirs. I also have a small collection of "antique" computers which I am slowly adding to: Lisa, Commodore 64, Timex/Sinclair 1000, a TRS-80 portable and an Osborne 1. I still want to buy some old favorites like the - TI-99, Commodore PET, Apple II (not a plus!), Atari 400, etc. One day I would like to write a book on the complete and udder (yuk yuk) history of the personal computer.

Well, I guess that's enough for now. Gee . . . can you tell I'm a Mac enthusiast?! I hope I didn't begin to bore you. I look forward to hearing from anyone in regards to this stack or anything else Mac related. One last thing - I am also trying to organize a "Historical Computer Society", if you would be interested, please let me know.

Take care,

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David Greelish is 28 years old, married and currently serving in the U. S. Army in Darmstadt, Germany. He is back in the States as of April 1993.

About this Stack

-- Created by David Greelish
-- 6156 Long Champ Drive
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--
-- My first "real" stack!
-- Started December 27, 1992
--
-- If you like it let me know!
--
-- Information for this stack was from first hand knowledge with help
-- from:
--
-- The Computer Glossary, fifth edition
-- by Alan Freedman
-- Copyright 1991, The Computer Language Company, Inc.
--
-- Dvorak's Inside Track to the Mac
-- by John C. Dvorak
-- Copyright 1992, Osborne / McGraw-Hill
--
-- Macintosh Buyer's Guide, 1986 - The Mac's 3rd Year Anniversary Issue
-- Copyright 1987, Redgate Publications
--
-- Gates (How Microsoft's Mogul Reinvented ...)
-- by Stephen Manes and Paul Andrews
-- Copyright 1993, Doubleday

*** FINIS ***